

Memorandum

To: Melissa Jones
Executive Director

Date: August 9, 2010

Telephone: (916) 654-4550

From: **California Energy Commission**
1516 Ninth Street
Sacramento CA 95814-5512

Subject: STAFF RECOMMENDATION TO APPROVE A \$216,462 LOW INTEREST-RATE LOAN WITH THE AMERICAN RECOVERY AND REINVESTMENT ACT (ARRA) FUNDS TO THE COUNTY OF DEL NORTE FOR HEATING AND VENTILATING SYSTEMS UPGRADES TO BE CONSIDERED AT THE SEPTEMBER 22, 2010 BUSINESS MEETING

Summary of Item

The County of Del Norte (county) has requested a loan to replace aging mechanical equipment at the county's Sheriff Office and Jail facility located in Crescent City.

The facility was built in 1964 and has had one addition completed in 1993. The facility operates 24/7 and most of the heating and ventilating equipment is original to the building. As such, the equipment has either outlived its expected service life or has become inoperable due to the corrosive effects of the coastal climate.

The primary source of heating fuel is liquid propane gas and #2 diesel fuel oil. This loan will allow the county to replace the diesel fired hot water boiler with fifteen (15) new single-zone 98% efficient condensing furnaces. As such, the existing multi-zone (MZ) air handling units (AHU) will be converted to a single-zone duct system thereby avoiding conditions of simultaneous heating and cooling commonly seen with MZ AHUs. This project will also eliminate the use of #2 diesel fuel oil as the boiler will be decommissioned.

The loan will also allow the county to replace three domestic hot water heaters and a failed make-up air unit. Air dampers that have rusted in place and associated controls will also be replaced with new dampers and a direct digital control system. Lastly, a standard efficiency motor will be replaced with one new premium efficiency motor. All new rooftop equipment will be coated with a rust inhibitor.

The projects will reduce the county's annual energy expenditures by \$20,721 or 17% for this facility. The total installation cost is estimated to be \$338,619. The county will use the loan funds to supplement their Energy Efficiency and Conservation Block Grant allocation of \$122,157 to complete all projects. At this time, none of the county's utility suppliers have agreed to provide utility rebates. The Energy Commission loan will be funded at an interest rate of three percent.

Table 1 summarizes the project savings, cost and simple payback.

Table 1 - Summary of Project Cost and Savings

Energy Efficiency Measure	Description	Annual Electricity Savings (kWh)	Annual Oil Savings (Gallons)	Annual LP Gas Savings (Gallons)	Annual Cost Savings	Project Installation Cost	Simple Payback (yrs)
EEM 1	Install new LP gas condensing furnaces and a heat recovery unit in place of MZ-4 in roof top penthouse (4-zone)	(9,866)	2,567	-	\$ 3,896	\$ 79,564	20.4
EEM 2	Install new LP gas condensing furnaces in place of the # MZ-6 in basement (6-zone)	(4,083)	2,135	-	\$ 4,041	\$ 90,417	22.4
EEM 3	Repair and replace economizer or the MZ-6 in basement and a new premium efficiency motor (6-zone)	1,153	259	-	\$ 1,234	\$ 19,555	15.9
EEM 4	Install new LP gas condensing furnaces in place of the # AHU-54 in basement (3-zone)	10,500	829	-	\$ 2,704	\$ 31,191	11.5
EEM 5	Install return air and economizer to AHU-54	-	288	-	\$ 598	\$ 10,705	17.9
EEM 6	Install a new LP gas condensing DHW heater/tank for the jail's old section DHW	-	834	-	\$ 1,729	\$ 30,696	17.8
EEM 7	Replace H&V #1 and #2 Reznor roof top furnaces with new LP gas condensing furnaces	-	-	319	\$ 689	\$ 28,622	41.5
EEM 8	Install two new LP gas condensing DHW heaters/tanks for the jail's new section DHW	-	-	2,703	\$ 5,832	\$ 47,868	8.2
Total		(2,296)	6,913	3,023	\$20,721	\$ 338,618	16.3
Simple Payback on Energy Commission Loan amount is 10.4 years.						\$ 216,462	10.4

Justification for Action Requested:

Energy Commission staff has determined that the loan request is technically justified and meets the requirements for a loan under ECAA. The program requires repayment of the loan, both interest and principal, within 15 years; this is equivalent to projects having a simple payback of 11 years or less. As this loan has an average simple payback of 10.4 years, it meets the requirement of the loan program. This project will not only reduce the county's energy use but also reduce their annual greenhouse gas emissions by 96 tons of CO₂.

It is estimated that the project will take 1,254 man-hours to complete and that jobs created from this project will be for plumbers, mechanical HVAC personnel and laborers. In accordance with ARRA, Section 1605, goods purchased and used for this project will be produced in the United States in a manner consistent with United States obligations under international agreements.

As a result, staff recommends approval of the loan.

Project Manager

Amir Ehyai, Special Projects Office

Oral Presentation

Staff will be prepared to discuss this recommendation and to respond to questions regarding the loan.

Business Meeting Participants

Amir Ehyai, Special Projects Office, Fuels and Transportation Division

Commission Action Requested

Approve the loan and authorize the Executive Director to execute the loan documents.

PAT PEREZ, Deputy Director
Fuels and Transportation Division

Pros:

- Consistent with the Energy Commission's *2009 Integrated Energy Policy Report* to reduce energy use, demand, and greenhouse gas emissions through efficiency and renewable energy programs and diversify California's energy sources.
- Meets the objective of the Energy Conservation Assistance Act (Public Resources Code Section 25412 et. seq.) which is to provide loans to public agencies to maximize energy use savings and implementation of cost effective energy efficiency measures.
- Consistent with the office's work plan goals of providing loans to public agencies for cost-effective energy saving projects.

Cons:

- None